

In the claims:

1-28. (Presently canceled)

29. (Presently Presented): An isolated polypeptide selected from the group consisting of:

a) a polypeptide comprising an amino acid sequence which is at least 95% identical to the amino acid sequence of SEQ ID NO:2, wherein the polypeptide has cytidine deaminase activity;

b) a polypeptide comprising a fragment of at least 15 contiguous amino acids of SEQ ID NO:2, wherein the polypeptide has cytidine deaminase activity; and

c) a polypeptide encoded by a nucleic acid molecule which hybridizes to the complement of the sequence set forth in SEQ ID NO:1 or 3 under stringent conditions comprising hybridization in 6x sodium chloride/sodium citrate at about 45°C, followed by one or more washes in 0.2 X SSC, 0.1% SDS at 50°C to 65°C, wherein the polypeptide has cytidine deaminase activity.

30. (Presently Presented): The polypeptide of claim 29, wherein the polypeptide comprises an amino acid sequence having at least 95% sequence identity to the amino acid sequence of SEQ ID NO:2, wherein the polypeptide has cytidine deaminase activity.

31. (Presently Presented): An isolated polypeptide comprising the amino acid sequence of SEQ ID NO:2.

32. (Presently Presented): An isolated polypeptide which is encoded by a nucleic acid molecule comprising the nucleotide sequence of SEQ ID NO:1 or SEQ ID NO:3.

33. (Presently Presented): The polypeptide of claim 29, further comprising heterologous amino acid sequences.

34. (Presently Presented): The polypeptide of claim 30, further comprising heterologous amino acid sequences.

35. (Presently Presented): The polypeptide of claim 31, further comprising heterologous amino acid sequences.

36. (Presently Presented): The polypeptide of claim 32, further comprising heterologous amino acid sequences.